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RESEARCH BACKGROUND

Swiftlet farming industry is a very profitable investment for those that are successful. The demand for edible bird's nest from China, Hong Kong, Taiwan, Japan, South Korea, India and the Middle Eastern countries is increasing. Swiftlet industry in Malaysia is facing difficult time since August 2011 because Chinese government has banned on edible bird's nest and its products from Malaysia. This is due to high level of nitrite (NO_2) spotted in edible bird's nest (AQSIQ, 2011). As the consequences, the edible bird's nest and swiftlet ranching industry in Malaysia has been hit hard. So, to meet the standard of Chinese government, an investigation is proposed by using indigenous microorganisms (IMO) technology for nitrite elimination in edible bird's nest of swiftlet.

PROJECT OBJECTIVES AND NOVELTY

Develop an innovative technology for the elimination of nitrite present in the bird's nest using a novel consortia of indigenous microorganisms (IMO) isolated locally.

- Novel finding of nitrite elimination for swiftlet ranching using microbiology technique.
- Usage of totally organic material.

APPLICATION/ POTENTIAL MARKET

- Swiftlet Ranching
- Agriculture sector
- Environmental issues
- Daily uses

CHALLENGES IN SWIFTLET RANCHING

Higher nitrite and nitrate in EBN has been contributed by bird soil. Bird soil of swiftlet house contain lower nitrite and nitrate contents compared to cave guanos which comprised a mixture of bird, bat droppings and other organic materials rich in nitrite and nitrate.

PUBLICATIONS

Che Mohd C.M.A., Tajuddin S.N., Tan L.L., Yusoff M.M., Jalila A. and Idris A. 2014. Sustainalble factors for edible bird's nest ranching in Malaysia. (PAPER IN REVIEW)

Ismail, M. F.., Sabri, N. A. and Tajuddion, S. N. A Study on Contamination of Nitrite in Edible Bird Nest (Swiflets). 2014. EBNIC 2014.

FINANCIAL SUPPORT

RDU131407- Research Acculturation Grant Scheme (RAGS)

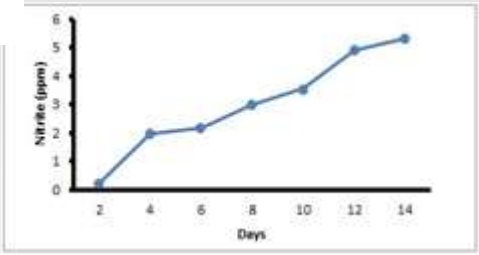
BENEFITS

- Water-based product support green chemistry.
- Cheaper price due to easy production process.
- User friendly for implementation in the bird house.

MATERIALS

Figure 1: (a) After a few days of fermentation, the IMO was harvested. (b) ElimiNit Products

PRELIMINARY RESULT



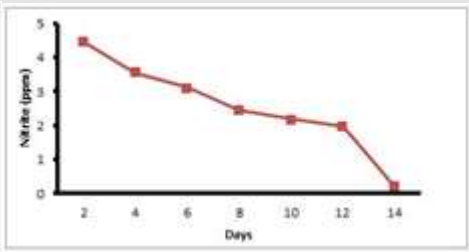


Figure 2: (a) Nitrite levels of bird soil for 14 days. (b) Nitrite level of bird soil treated with ElimiNit for 14 days.

Figure 3: (a) Color changes of EBN induced by bird soil on Day 14; (b) No color changes of EBN after the bird soil treated with ElimiNit.

The contamination of NO_2^- in EBN mainly comes from the bird-soil, which involved enzymatic reaction by bacteria in natural environment at certain temperature, and humidity. Color of EBN also would become an indicator of NO_2^- level. The higher the level of NO_2^-, the color of EBN changes from white to yellowish and brownish.

PATENT

ElimiNit: Your Friend in Fighting Nitrite
(Application has been submitted)

PARTNERSHIP

Swiftlet Farming
Awesome Swiftlet Enterprise